

SEQUENCE LISTING

<110> Yeda Research & Development Company Limited at the Bio-Technology General Corp.

<120> Tumor Associated Antigen Peptides and Use of Same as Anti-Tumor Vaccines

<130> 453-A-PCT

<140>

<141>

<150> 125608

<151> 1998-07-30

<160> 77

<170> PatentIn Ver. 2.1

<210> 1

<211> 9

<212> PRT

<213> Homo sapiens

<400> 1

Phe Leu Leu Val Leu Gly Phe Ile Ile
1 5

<210> 2

<211> 9

<212> PRT

<213> Homo sapiens

<400> 2

Val Leu Pro Ser Val Ala Met Phe Leu
1 5

<210> 3

<211> 9

<212> PRT

<213> Homo sapiens

<400> 3

Leu Val Leu Gly Phe Ile Ile Ala Leu
1 5

<210> 4
<211> 9
<212> PRT
<213> Homo sapiens

<400> 4
Lys Val Val Thr Ser Ser Phe Val Val
1 5

<210> 5
<211> 9
<212> PRT
<213> Homo sapiens

<400> 5
Leu Val Pro Gly Thr Lys Phe Tyr Ile
1 5

<210> 6
<211> 9
<212> PRT
<213> Homo sapiens

<400> 6
Leu Leu Pro Ile Arg Thr Leu Pro Leu
1 5

<210> 7
<211> 9
<212> PRT
<213> Homo sapiens

<400> 7
Tyr Leu Val Lys Lys Gly Thr Ala Thr
1 5

<210> 8
<211> 9
<212> PRT
<213> Homo sapiens

<400> 8
Ser Leu Phe Ala Glu Thr Ile Trp Val
1 5

<210> 9
<211> 9
<212> PRT
<213> Homo sapiens

<400> 9
Met Leu Ile Ala Met Tyr Phe Tyr Thr
1 5

<210> 10
<211> 9
<212> PRT
<213> Homo sapiens

<400> 10
Leu Met Trp Thr Leu Pro Val Met Leu
1 5

<210> 11
<211> 9
<212> PRT
<213> Homo sapiens

<400> 11
Met Leu Ile Val Tyr Ile Phe Glu Cys
1 5

<210> 12
<211> 9
<212> PRT

<213> Homo sapiens

<400> 12
Tyr Ile Phe Glu Cys Ala Ser Cys Ile
1 5

<210> 13

<211> 9

<212> PRT

<213> Homo sapiens

<400> 13
Leu Val Leu Met Leu Ile Val Tyr Ile
1 5

<210> 14

<211> 9

<212> PRT

<213> Homo sapiens

<400> 14
Ala Leu Cys Arg Arg Arg Ser Met Val
1 5

<210> 15

<211> 9

<212> PRT

<213> Homo sapiens

<400> 15
Leu Leu Ser Gly Leu Ser Leu Phe Ala
1 5

<210> 16

<211> 9

<212> PRT

<213> Homo sapiens

<400> 16
Phe Leu Leu Val Val Gly Leu Ile Val

1

5

<210> 17
<211> 9
<212> PRT
<213> Homo sapiens

<400> 17
Leu Val Val Gly Leu Ile Val Ala Leu
1 5

<210> 18
<211> 9
<212> PRT
<213> Homo sapiens

<400> 18
Lys Val Val Lys Ser Asp Phe Val Val
1 5

<210> 19
<211> 9
<212> PRT
<213> Homo sapiens

<400> 19
Thr Leu Pro Val Gln Thr Leu Pro Leu
1 5

<210> 20
<211> 9
<212> PRT
<213> Homo sapiens

<400> 20
Asp Leu His Val Ile Ser Asn Asp Val
1 5

<210> 21
<211> 9
<212> PRT
<213> Homo sapiens

<400> 21
Val Leu Val His Pro Gln Trp Val Leu
1 5

<210> 22
<211> 9
<212> PRT
<213> Homo sapiens

<400> 22
Phe Leu Arg Pro Gly Asp Asp Ser Ser
1 5

<210> 23
<211> 9
<212> PRT
<213> Homo sapiens

<400> 23
Ala Leu Gly Thr Thr Cys Tyr Ala Ser
1 5

<210> 24
<211> 9
<212> PRT
<213> Homo sapiens

<400> 24
Lys Leu Gln Cys Val Asp Leu His Val
1 5

<210> 25
<211> 9
<212> PRT
<213> Homo sapiens

<400> 25

Glu Leu Ala His Tyr Asp Val Leu Leu
1 5

<210> 26

<211> 9
<212> PRT
<213> Homo sapiens

<400> 26

Asn Leu Asn Gly Ala Gly Asp Pro Leu
1 5

<210> 27

<211> 9
<212> PRT
<213> Homo sapiens

<400> 27

Thr Leu Arg Val Asp Cys Thr Pro Leu
1 5

<210> 28

<211> 9
<212> PRT
<213> Homo sapiens

<400> 28

Met Met Asn Asp Gln Leu Met Phe Leu
1 5

<210> 29

<211> 9
<212> PRT
<213> Homo sapiens

<400> 29

Ala Leu Phe Asp Ile Glu Ser Lys Val
1 5

<210> 30
<211> 9
<212> PRT
<213> Homo sapiens

<400> 30
Leu Leu His Glu Thr Asp Ser Ala Val
1 5

<210> 31
<211> 9
<212> PRT
<213> Homo sapiens

<400> 31
Val Leu Ala Lys Glu Leu Lys Phe Val
1 5

<210> 32
<211> 9
<212> PRT
<213> Homo sapiens

<400> 32
Ile Leu Leu Trp Gln Pro Ile Pro Val
1 5

<210> 33
<211> 9
<212> PRT
<213> Homo sapiens

<400> 33
Asp Leu Phe Gly Ile Trp Ser Lys Val
1 5

<210> 34

<211> 9
<212> PRT
<213> Homo sapiens

<400> 34
Pro Leu Glu Arg Phe Ala Glu Leu Val
1 5

<210> 35
<211> 9
<212> PRT
<213> Homo sapiens

<400> 35
Lys Gln Gly Asn Phe Asn Ala Trp Val
1 5

<210> 36
<211> 9
<212> PRT
<213> Homo sapiens

<400> 36
Asn Leu Leu Arg Arg Met Trp Val Thr
1 5

<210> 37
<211> 9
<212> PRT
<213> Homo sapiens

<400> 37
Asn Leu Phe Glu Thr Pro Ile Leu Ala
1 5

<210> 38
<211> 9
<212> PRT
<213> Homo sapiens

<400> 38
Asn Leu Phe Glu Thr Pro Val Glu Ala
1 5

<210> 39
<211> 9
<212> PRT
<213> Homo sapiens

<400> 39
Gly Leu Gln His Trp Val Pro Glu Leu
1 5

<210> 40
<211> 9
<212> PRT
<213> Homo sapiens

<400> 40
Val Gln Phe Val Ala Ser Tyr Lys Val
1 5

<210> 41
<211> 9
<212> PRT
<213> Homo sapiens

<400> 41
Arg Leu Leu Ala Ala Leu Cys Gly Ala
1 5

<210> 42
<211> 9
<212> PRT
<213> Homo sapiens

<400> 42
Leu Leu Leu Leu Thr Val Leu Thr Val
1 5

<210> 43
<211> 9
<212> PRT
<213> Homo sapiens

<400> 43
Leu Leu Leu Thr Val Leu Thr Val Val
1 5

<210> 44
<211> 9
<212> PRT
<213> Homo sapiens

<400> 44
Phe Leu Ser Phe His Ile Ser Asn Leu
1 5

<210> 45
<211> 9
<212> PRT
<213> Homo sapiens

<400> 45
Leu Leu Val Leu Val Cys Val Leu Val
1 5

<210> 46
<211> 9
<212> PRT
<213> Homo sapiens

<400> 46
Ala Leu Leu Val Leu Val Cys Val Leu
1 5

<210> 47
<211> 9

<212> PRT
<213> Homo sapiens

<400> 47
Ser Leu Ser Tyr Thr Asn Pro Ala Val
1 5

<210> 48
<211> 9
<212> PRT
<213> Homo sapiens

<400> 48
Asn Leu Thr Ile Ser Asp Val Ser Val
1 5

<210> 49
<211> 9
<212> PRT
<213> Homo sapiens

<400> 49
Ala Leu Ala Ser Thr Ala Pro Pro Val
1 5

<210> 50
<211> 9
<212> PRT
<213> Homo sapiens

<400> 50
Ala Ile Leu Cys Trp Thr Phe Trp Val
1 5

<210> 51
<211> 9
<212> PRT
<213> Homo sapiens

<400> 51

Phe Ile Leu Met Phe Ile Val Tyr Ala
1 5

<210> 52
<211> 9
<212> PRT
<213> Homo sapiens

<400> 52
Leu Thr Ala Glu Cys Ile Phe Phe Val
1 5

<210> 53
<211> 9
<212> PRT
<213> Homo sapiens

<400> 53
Met Leu Gln Asp Asn Cys Cys Gly Val
1 5

<210> 54
<211> 9
<212> PRT
<213> Homo sapiens

<400> 54
Ile Leu Cys Trp Thr Phe Trp Val Leu
1 5

<210> 55
<211> 9
<212> PRT
<213> Homo sapiens

<400> 55
Lys Ile Leu Leu Ala Tyr Phe Ile Leu
1 5

<210> 56
<211> 9
<212> PRT
<213> Homo sapiens

<400> 56
Phe Val Gly Ile Cys Leu Phe Cys Leu
1 5

<210> 57
<211> 9
<212> PRT
<213> Homo sapiens

<400> 57
Val Leu Leu Ser Val Ala Met Phe Leu
1 5

<210> 58
<211> 9
<212> PRT
<213> Homo sapiens

<400> 58
Leu Leu Ser Val Ala Met Phe Leu Leu
1 5

<210> 59
<211> 9
<212> PRT
<213> Homo sapiens

<400> 59
Ile Leu Gly Ser Leu Pro Phe Phe Leu
1 5

<210> 60
<211> 9
<212> PRT

<213> Homo sapiens

<400> 60

Ile Leu Asn Ala Tyr Leu Val Arg Val
1 5

<210> 61

<211> 9

<212> PRT

<213> Homo sapiens

<400> 61

Phe Leu Leu Val Gly Phe Ala Gly Ala
1 5

<210> 62

<211> 9

<212> PRT

<213> Homo sapiens

<400> 62

Asn Leu Gln Pro Gln Leu Ala Ser Val
1 5

<210> 63

<211> 9

<212> PRT

<213> Homo sapiens

<400> 63

Cys Met Phe Asp Ser Lys Glu Ala Leu
1 5

<210> 64

<211> 9

<212> PRT

<213> Homo sapiens

<400> 64

Tyr Leu Tyr Val Leu Val Asp Ser Ala

1

5

<210> 65
<211> 9
<212> PRT
<213> Homo sapiens

<400> 65
Tyr Met Asp Gly Thr Met Ser Gln Val
1 5

<210> 66
<211> 9
<212> PRT
<213> Homo sapiens

<400> 66
Lys Met Ala Arg Phe Ser Tyr Ser Val
1 5

<210> 67
<211> 9
<212> PRT
<213> Homo sapiens

<400> 67
Gly Leu Val Met Asp Glu His Leu Val
1 5

<210> 68
<211> 9
<212> PRT
<213> Homo sapiens

<400> 68
Phe Leu Pro Gly Cys Asp Gly Leu Val
1 5

<210> 69
<211> 9
<212> PRT
<213> Homo sapiens

<400> 69
Cys Met Leu Gly Ser Phe Cys Ala Cys
1 5

<210> 70
<211> 9
<212> PRT
<213> Homo sapiens

<400> 70
Tyr Leu Ala Phe Arg Asp Asp Ser Ile
1 5

<210> 71
<211> 9
<212> PRT
<213> Homo sapiens

<400> 71
Trp Leu Pro Lys Lys Cys Ser Leu Cys
1 5

<210> 72
<211> 9
<212> PRT
<213> Homo sapiens

<400> 72
Cys Leu Asn Gly Gly Thr Cys Met Leu
1 5

<210> 73
<211> 9
<212> PRT
<213> Homo sapiens

<400> 73

Met Leu Val Gly Ile Cys Leu Ser Ile
1 5

<210> 74

<211> 9

<212> PRT

<213> Homo sapiens

<400> 74

Phe Glu Leu Gly Leu Val Ala Gly Leu
1 5

<210> 75

<211> 9

<212> PRT

<213> Homo sapiens

<400> 75

Lys Met Val Arg Phe Ser Tyr Ser Val
1 5

<210> 76

<211> 9

<212> PRT

<213> Homo sapiens

<400> 76

Cys Leu Asn Glu Gly Thr Cys Met Leu
1 5

<210> 77

<211> 9

<212> PRT

<213> Homo sapiens

<400> 77

Met Leu Ala Gly Ile Cys Leu Ser Ile
1 5

INTERNATIONAL SEARCH REPORT

International application No
PCT/IL 99/00417

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7	C12N15/12	C07K14/47	C07K14/705	C12N9/16	C12N9/64
	A61K38/17	A61K38/46	A61K38/47	C12N15/55	C12N15/57
	C12N5/08				

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 C07K C12N A61K

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
P, X	WO 98 43084 A (UNIV LELAND STANFORD JUNIOR) 1 October 1998 (1998-10-01) claims; table 4 ---	1, 5, 6, 20-22, 55
X	WO 94 20127 A (CYTEL CORP) 15 September 1994 (1994-09-15) table 25 ---	1, 5, 6, 20-22, 55
X	DE 195 16 673 A (PECHER GABRIELE DR) 31 October 1996 (1996-10-31) claims; examples --- -/-	1, 13, 20-22, 43-45

 Further documents are listed in the continuation of box C. Patent family members are listed in annex.

* Special categories of cited documents :

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier document but published on or after the international filing date
- "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

- "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- "&" document member of the same patent family

Date of the actual completion of the international search

Date of mailing of the international search report

30 December 1999

12/01/2000

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax: (+31-70) 340-3016

Authorized officer

Fuhr, C

INTERNATIONAL SEARCH REPORT

International Application No

PCT/IL 99/00417

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 97 08318 A (CORIXA CORP) 6 March 1997 (1997-03-06) claims; examples ---	1,5, 20-22, 26,30, 31,34, 51-55
A	WO 95 04548 A (JENNER TECHNOLOGIES) 16 February 1995 (1995-02-16) page 7, line 17 - line 35; claims; examples ---	1,26,32, 37,38,42
P,A	DE 197 58 400 A (HANISCH FRANZ GEORG PROF DR ;MAX DELBRUECK CT FUER MOLEKULA (DE)) 1 July 1999 (1999-07-01) claims; table 1 ---	1,26,32, 37,38,42
X	WO 97 11715 A (AUSTIN RESEARCH INST ;SANDRIN MAURO SERGIO (AU); MCKENZIE IAN FARQ) 3 April 1997 (1997-04-03) claims; examples ---	1,11-13, 26-38, 46,51-55
X	WO 97 35021 A (US HEALTH ;ZAREMBA SAM (US); SCHLOM JEFFREY (US); TSANG KWONG YOK) 25 September 1997 (1997-09-25) claims; examples; table 10 ---	1,5,20, 21, 26-38, 51-55
A	WO 95 19783 A (CELIS ESTEBAN ;GREY HOWARD M (US); CYTEL CORP (US); KUBO RALPH T () 27 July 1995 (1995-07-27) claims; examples ---	1,26
A	WEINSTEIN B: "CHEMISTRY AND BIOCHEMISTRY OF AMINO ACIDS, PEPTIDES AND PROTEINS, PASSAGE" CHEMISTRY AND BIOCHEMISTRY OF AMINO ACIDS, PEPTIDES, AND PROTEINS, XX, XX, vol. 7, page 266-357 XP002032461 the whole document -----	23-25

INTERNATIONAL SEARCH REPORT

International application No.

PCT/IL 99/00417

Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. Claims Nos.: because they relate to subject matter not required to be searched by this Authority, namely:
Remark: Although claims 37-38 are directed to a method of treatment of the human/animal body, the search has been carried out and based on the alleged effects of the compound/composition.
2. Claims Nos.: 43-45 because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
see FURTHER INFORMATION sheet PCT/ISA/210
3. Claims Nos.: because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

The additional search fees were accompanied by the applicant's protest.

No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

International Application No. PCT/IL 99 00417

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

Continuation of Box I.2

Claims Nos.: 43-45

Present claims 23-25 relate to an extremely large number of possible compounds/products. Support within the meaning of Article 6 PCT and/or disclosure within the meaning of Article 5 PCT is to be found, however, for only a very small proportion of the compounds/products claimed. In the present case, the claims so lack support, and the application so lacks disclosure, that a meaningful search over the whole of the claimed scope is impossible. Consequently, the search has been carried out for those parts of the claims which appear to be supported and disclosed, namely those parts relating to the compounds/products prepared in the examples and closely related homologous compounds like those mentioned in the sequence listing.

Present claims 43-45 relate to an extremely large number of possible compounds/products/apparatus/methods. In fact, the claims contain so many options, variables, possible permutations and provisos that a lack of clarity (and/or conciseness) within the meaning of Article 6 PCT arises to such an extent as to render a meaningful search of the claims impossible. Consequently, no search has been carried out for this parts of the application.

The applicant's attention is drawn to the fact that claims, or parts of claims, relating to inventions in respect of which no international search report has been established need not be the subject of an international preliminary examination (Rule 66.1(e) PCT). The applicant is advised that the EPO policy when acting as an International Preliminary Examining Authority is normally not to carry out a preliminary examination on matter which has not been searched. This is the case irrespective of whether or not the claims are amended following receipt of the search report or during any Chapter II procedure.

INTERNATIONAL SEARCH REPORT

Information on patent family members

Invention: Application No

PCT/IL 99/00417

Patent document cited in search report		Publication date	Patent family member(s)		Publication date
WO 9843084	A	01-10-1998	US	5858685 A	12-01-1999
			AU	6570998 A	20-10-1998
WO 9420127	A	15-09-1994	AU	6359494 A	26-09-1994
			AU	6597998 A	02-07-1998
			BR	9406652 A	10-09-1996
			CA	2157510 A	15-09-1994
			CN	1118572 A	13-03-1996
			EP	0703783 A	03-04-1996
			JP	8507525 T	13-08-1996
			NZ	263050 A	24-11-1997
			SG	49008 A	18-05-1998
DE 19516673	A	31-10-1996	NONE		
WO 9708318	A	06-03-1997	US	5854206 A	29-12-1998
			AU	7012496 A	19-03-1997
WO 9504548	A	16-02-1995	AU	686660 B	12-02-1998
			AU	7631294 A	28-02-1995
			CA	2168952 A	16-02-1995
			EP	0721345 A	17-07-1996
			JP	9504000 T	22-04-1997
			US	5925362 A	20-07-1999
DE 19758400	A	01-07-1999	WO	9934824 A	15-07-1999
WO 9711715	A	03-04-1997	AU	7079396 A	17-04-1997
			AU	707223 B	08-07-1999
			AU	7079496 A	17-04-1997
			WO	9711963 A	03-04-1997
			CA	2233447 A	03-04-1997
			EP	0859627 A	26-08-1998
WO 9735021	A	25-09-1997	AU	2535997 A	10-10-1997
			EP	0888456 A	07-01-1999
WO 9519783	A	27-07-1995	US	5662907 A	02-09-1997
			AU	1834095 A	08-08-1995
			AU	4111999 A	23-09-1999
			CA	2181920 A	27-07-1995
			EP	0749315 A	27-12-1996
			SG	49743 A	15-06-1998

